Section 14 Fisheries and Water-Related Wildlife

14 Fisheries and Water-Related Wildlife

The Kanab Creek/Virgin River Basin supports a diverse and abundant wildlife fauna. Physiographically, the basin varies from alpine environments as high as 10,325 feet to 2,297 feet elevation in the Mojave Desert ecosystem of Beaver Dam Wash. The types of wildlife found in the basin also vary accordingly. The basin is home to several threatened and endangered species. The protection and recovery of those species will play a major role in determining the course of water resources use and development in the future.

14.1 Introduction

This section describes the fisheries and other water-related wildlife in the basin. Multifaceted recreational opportunities provided by wildlife and fishing can be enjoyed by all ages regardless of their situation. All forms of wildlife depend on water at some point in their lives. Water is being developed and associated riparian communities are being impacted. For these reasons, it is important to understand the relationship of fisheries and wildlife to other water-related resources. Some of this area has unique ecosystems supporting a diversity of rare species.

14.2 Setting

The Division of Wildlife Resources has the responsibility for management, protection, propagation and conservation of the state's wildlife resources. Some federal agencies have limited authority for wildlife management on lands they administer. Threatened and endangered species are primarily the responsibility of the U.S. Fish and Wildlife Service.

Planning for wildlife habitat needs is recognized as an integral part of basin water planning. Fishing, hunting and non-game wildlife activities contribute financially to the economy and these need to be considered in water development plans. The Division of

Wildlife Resources will assume the lead role in determining potential impacts (positive and negative) to wildlife resources from water development projects. The role of the Division of Wildlife Resources in water planning is:

1. Assess water development plans and specifically:
   a. Identify potential benefits to wildlife and their habitats.
   b. Identify potential adverse impacts to wildlife and their habitats.
   c. Recommend a course of action to mitigate project impacts to preservewildlife and their habitat for the public interest.
   d. Recommend termination if mitigation is not feasible or possible.
2. Provide factual information to decision makers regarding consequences of unmitigated and mitigated impacts to wildlife resources.

14.3 Policy Issues and Recommendations

This section addresses three policy issues. They deal with instream flows, wetland and riparian habitat and endangered species.

14.3.1 Instream Flows

Issue - Quantification of instream flow requirements in the basin is controversial.

Discussion - Instream flow is defined as water flow maintained in a stream channel. Instream flows are required to support fish populations, maintain riparian vegetation and streambank stability, achieve favorable conditions of flow in stream channels, provide aesthetic enjoyment and recreational use and supply normal daily requirements of birds and animals.

The Utah Code Annotated allows the Division of Wildlife Resources or Division of Parks and Recreation to file changes on perfected water rights in order to provide instream flows in designated reaches of streams. These flows may be acquired for preservation and enhancement of fisheries, the natural stream environment or public recreation. Flow releases from dams for other downstream uses often provide the necessary fluctuation as well as accommodate instream flow requirements along the way.

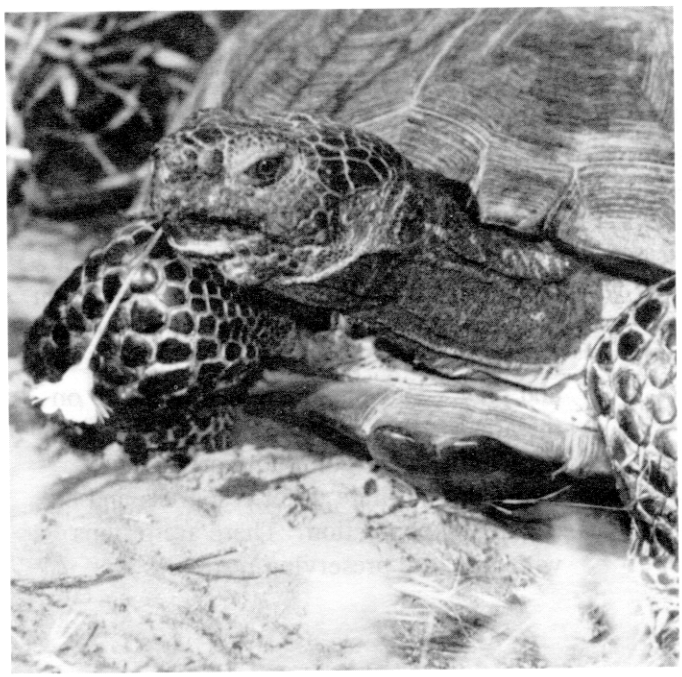
Instream flow decisions may affect some water development projects including reservoir operation, hydroelectric power generation, spring source development, irrigation and municipal uses. The *Utah Code Annotated* authorizes the State Engineer to reject an application to appropriate water or change use of a water right if, in the State Engineer's judgment, approval of the application would unreasonably affect public recreation or the natural environment. The U.S. Fish and Wildlife Service may also require instream flows in certain reaches of a stream if a particular segment is declared critical habitat for an endangered species. The Bureau of Land Management is conducting an instream flow inventory in the Virgin River Basin in connection with the Dixie Resource Management Plan.

Recommendation - Planning for water projects should incorporate instream flow considerations as part of project operating criteria.

14.3.2 Wetland and Riparian Habitat

Issue - Over the years, wetlands and riparian areas have been reduced in extent and quality.

Discussion - There are relatively few wetland areas in the basin. Waterfowl habitat areas are limited to a few "potholes" and marshes created by seepage from farm ponds, reservoirs and other water sources including springs and lakes. These are used primarily as resting areas for migrating birds, although some species live in these areas year-round. Some of the ponds are used for brood rearing as is evidenced by broods reared on a BLM reservoir on Little Creek Mountain and several other small reservoirs in the basin. Terrestrial wildlife also use these areas. Wetlands should be protected due to their importance to wildlife and human populations.



Riparian areas include land directly influenced by sufficient water to sustain growth. In general, over 80 percent of all wildlife species are associated with riparian areas at some point in their life cycle, although this zone accounts for less than five percent of the total land mass in the basin. This makes these areas important to wildlife.

Riparian communities in good condition exhibit an abundant and diverse assortment of plants. Healthy communities show good age distribution and the soil is mostly covered with vegetation. This provides streambank stability, maintains channel contours, regulates water flows and enhances water quality.

Kanab Creek, Johnson Wash, Virgin River, Santa Clara River and West Fork of the Beaver Dam Wash are all important habitat for terrestrial species. Present wildlife species include amphibians, 10; birds, 216; mammals, 63; reptiles, 29 and fishes, 35. Also see Section 16.4.8. Riparian vegetation is well developed along Kanab Creek, Johnson Wash, both forks of the Virgin River, the Santa Clara River, Fort Pierce Wash and the West Fork of the Beaver Dam Wash as well as several smaller perennial streams and around many springs.

Recommendation - Wetlands and riparian communities with significant values should be identified. The Division of Wildlife Resources should be contacted during project planning to provide input and suggest mitigation practices.

14.3.3 Endangered Species

Issue - Several species in the basin are now on the threatened and endangered species list or could be placed on the list. These should be considered where there are planned projects.

Discussion - The basin contains several federally threatened and endangered species (T&E). These species have full protection under the Endangered Species Act. See Section 16.4.8 for the definition of "take" for T&E species. In addition, some species are federally classified as Category 1 or Category 2. Category 1 species are up for listing as soon as funding is available. Category 2 species are those of which the U. S. Fish and Wildlife Service (USFWS) currently does not have adequate data to list as a T&E species. While species in these categories do not have federal protection, the USFWS encourages their consideration in long-range environmental planning. Planning and management for these species now may prevent them from being listed as threatened or endangered at a later date.

A list of the federally classified T&E species occurring in the basin area is shown in Section 16.4.8. Not all these species are physically found in water, but water development that includes upland or riparian habitats may still impact them. The USFWS or the Utah Department of Natural Resources Natural Heritage Program should be contacted for further information regarding plants.

The USFWS has jurisdiction over all T&E species. Any activities which may affect these species must be coordinated with USFWS. They are also responsible for recovery teams which address the T&E species. Recovery plans for some T&E species identify guidelines and stipulations for new development.

If T&E species are believed to occur in the proposed project area, USFWS must be contacted before starting the project. If federal funds are involved, this is usually automatically done. The USFWS will normally ask for a biological assessment to be completed if T&E species may be affected by the project. This assessment will look at the potential impacts of the proposed project. The USFWS will subsequently review the assessment and issue a biological opinion. This opinion may indicate the project cannot continue due to adverse impacts to the species or it may suggest a combination of mitigation alternatives which will allow the project to continue while reducing impacts to the species. Every situation is different.

Recommendation - Project sponsors should contact USFWS during the planning phase of any project to consider T&E and Category 1 & 2 species to alleviate potential problems. Consideration should be given to tradeoffs in public values during the listing and habitat management plans process.

14.4 Environmental Problems

Many environmental problems in the basin are the result of expanding population centers. Because of the mild winter climate, people are attracted from other areas to live and play. This puts increased pressure on the area's water resources.

Conflicts are going to increase in the future due to finite water resources and an expanding population. There are groups who advocate preserving resources by

instream flow protection while other groups depend on these resources for their livelihood. These conflicting demands will increase in the future.

14.5 Fish, Wildlife and Habitat Needs

Streams and lakes in the southwest part of Utah are on the northeastern edge of the Mojavian Desert region. The stream courses are generally associated with desert willow and Fremont cottonwood trees. The stream channels are usually wide to accommodate flash floods which occur periodically during the year. The streams usually have high water temperatures and sandy channel bottoms. There are few perennial streams in the region, and only a few of them accommodate sport fishing. The sport fisheries for the area congregate around Baker, Gunlock, Quail Creek and Kolob reservoirs and tributaries on the Dixie National Forest.

The Beaver Dam Wash drainage on the western edge of Utah is influenced some by the irrigation demands in the area. The flows are decreased the most during the summer when water demands for irrigation are high. The water channels are wide from frequent floods that scour the stream bottom. Native fish species that occur in this drainage include the Virgin spinedace. The West Fork of Beaver Dam Wash supports a natural habitat for rainbow trout reproduction, but there is limited access for fishermen. There are concerns the rainbow trout prey on the Virgin spinedace. No other sport fisheries exist in this drainage in Utah.

The Santa Clara River drainage is the most important to the fishermen because there are brown trout and rainbow trout in the upper parts and largemouth bass just above and in Gunlock Reservoir. There are also two reservoirs, Baker and Gunlock, that provide lake fishing. Baker Reservoir

contains rainbow and brown trout and is stocked periodically by the Utah Division of Wildlife Resources. Gunlock Reservoir is managed as a warm water fishery and contains largemouth bass, bluegill, black crappie, channel catfish and green sunfish. Two smaller reservoirs, the Upper and Lower Sand Coves, are located just northeast of Gunlock and contain largemouth bass, black crappie, bluegill and brown trout. The streams in this area are heavily used for irrigation. Portions of the Santa Clara are dewatered at various places for these practices. Many native fish species, including the Virgin spinedace, occur in this drainage.

The Virgin River drainage, the largest in this area, has the most water. This drainage has several fish associated with it. The Virgin River contains some brown trout above the Zion National Park boundary. Rainbow trout, cutthroat trout and brown trout can be found in several of the tributaries as well as the upper reaches on National Forest land. Brown trout are found throughout Zion National Park. Flash floods are common in some of the lower tributaries and may periodically almost eliminate the trout populations. Endangered fishes, the woundfin minnow and Virgin River roundtail chub, are found only in the Virgin River. The U. S. Fish and Wildlife Service has proposed the river be designated critical habitat for these species. The Virgin River also provides habitat for other native species including the Virgin spinedace, flannel mouth sucker, desert sucker, and speckled dace. The Virgin spinedace has been listed in the Federal Register as a proposed threatened and endangered species. The drainage has conditions common to desert streams where siltation, widely fluctuating flows and high water temperatures are occurring along the stream.

Kanab Creek and Johnson Wash drainages do not provide much in the way of sport fisheries. Flows are generally too small to provide adequate habitat for fish although terrestrial wildlife benefit from the water and riparian community. There may be limited aquatic habitat in the upper stream reaches. Flows in the lower reaches in Arizona support some native fish species.

Instream flows could provide more and better fish habitat and support riparian communities where perennial water is available. This may infringe on existing water rights in some areas. As a side benefit, reservoir storage releases could provide more adequate instream flows. The most desirable instream flows for native fish species may only be represented by the unregulated regime.

Riparian areas are important wildlife habitat for many species. Such areas generally offer all four major habitat components: food, water, cover and living space. The available water and deeper soils increase production of plant and animal biomass. The contrast with surrounding vegetation increases habitat diversity and the linear shape of a riparian area increases the "edge" between the contrasting vegetation types. Differing combinations of increased humidity, transpiration, vegetation height, shading and air drainages produce varied microclimates. Linear riparian zones serve as connectors between habitat types and provide travel lanes and migration routes for such animals as birds, bats, deer and elk.

Some riparian areas have been degraded by livestock grazing and trampling. Degraded riparian areas can also reduce the water quality. Other areas have been

damaged by ATV travel and other recreational uses, as well as dewatering of streams. These can cause loss of some vegetation and associated wildlife values, loss of streambank stability and siltation.

14.6 Mitigation Policy

Where possible, it is easier and better to plan development projects to avoid the necessity for mitigation. In some cases, mitigation becomes necessary and it will become part of project plans. Mitigation alternatives to consider include maintenance of native fish communities and habitat and the associated ecological requirements.

The Bureau of Land Management has a riparian demonstration project where best management practices and instream habitat improvement work has been implemented. The North Creek demonstration project in Washington County began in 1979 in an area where most of the negative impacts were due to recreationists and livestock grazing. Sixty acres were fenced to prohibit use and to allow vegetation to re-establish. This site is still in the rejuvenation stage with vegetation becoming established.

Habitat can be classified according to value. Four categories of habitat are used in Utah. They are critical, high-priority, substantial-value and limited-value. Mitigation goals vary with habitat value, wildlife species and project plans. For example, the Virgin River Fishes Recovery Plan could be useful to help determine habitat value.

There are several approaches to mitigation. In order of importance, they are:

1. Avoiding the impact altogether by not taking a certain action or parts of the action.
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
3. Rectifying the impact by repairing, rehabilitating or restoring the affected environment.
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
5. Compensating for the impact by replacing or providing substitute resources or environment within the same drainage when possible.

14.7 Alternative Solutions

There are several alternatives to solving fisheries and water-related wildlife habitat problems. These need to be continually evaluated and updated.

Whenever reservoir storage projects are constructed, consideration should be given by interested groups and the Utah Division of Wildlife Resources to purchase conservation pools or storage water. This may enhance the fish and wildlife values, provide holdover storage during dry periods, and enhance instream flows for sport fisheries. Purchase of conservation pools and storage should also be considered in existing reservoirs. Rehabilitation of disturbed areas should also be a part of projects.

One way to defer use of riparian areas by livestock grazing is by providing water upland from stream banks. Options include upstream ponds, horizontal wells and wind power or solar energy to pump water to upland areas. Other ways to defer livestock uses of riparian habitat include fencing the area and managing it as a pasture or changing the season of use.

Another technique to assist with acceleration of re-growth on riparian areas is construction of instream structures. These include low head check dams, rock weirs, streambank protection, sediment traps, building up water tables, vegetation planting and/or anchoring trees or rocks to streambanks to prevent further erosion. ■

14.8 References

1. U.S. Department of Agriculture, Soil Conservation Service and Utah Department of Natural Resources, Division of Water Resources. *Virgin River Basin - Utah Cooperative Study*. Salt Lake City, Utah, 1990.

2. Utah Division of Wildlife Resources. *File Data on Wildlife*. Salt Lake City, Utah.

3. U.S. Fish and Wildlife Service. *Virgin River Fishes Recovery Plan, Public Review Draft*. Prepared by Virgin River Fishes Recovery Team, Salt Lake City, Utah, 1992.